PoE Features

Fast PoE and Perpetual PoE

PoE support for Cisco Catalyst IE9300 Rugged Series Switches includes Fast PoE and Perpetual PoE, which restore or preserve power during system boot, respectively.

You enable Fast PoE and Perpetual PoE by using the CLI. See Configure Perpetual PoE and Fast PoE, on page 2 in this guide.

Fast PoE

Fast PoE switches on power without waiting for IOS-XE to boot up. When **poe-ha** is enabled on a particular port, the switch on a recovery after a power failure provides power to the connected endpoint devices before even IOS- forwarding starts. Power is restored several minutes sooner than it otherwise would be.

When enabled, Fast PoE can be used after both reset and power cycle.

The system needs to load and validate the power sourcing equipment (PSE) firmware before initiating Fast PoE connections. It also must verify that adequate power budget is available for all fast PoE reconnections. If the system doesn't have enough budget to reconnect all the fast PoE ports, it will reconnect fast PoE ports starting from the lower interface number until the power budget is exhausted.

Perpetual PoE

Perpetual PoE ensures that PDs do not lose power when IOS-XE is rebooted. When perpetual PoE is enabled, the system does not reset the PSE controllers, ensuring that their loads stay connected.

The system securely stores the firmware information when it validated it. After a reset, the system can detect if the firmware has not changed since the last validation.

Perpetual PoE is sometimes referred to as Persistent PoE.

Restrictions for Fast PoE and Perpetual PoE

The following restrictions apply to Fast PoE and Perpetual PoE:

- You must configure Fast PoE or Perpetual PoE before physically connecting any endpoint. Alternatively, you can do a manual shut/no-shut of the ports drawing power.

- In case of an MCU firmware upgrade, power to the ports is interrupted and ports are backed up immediately after the upgrade.

- The Cree Lighting PD may flap at regular intervals if not configured with IP assigned from the DHCP server.

- If the PD does not support LLDP, you can configure with either static or 2-event to receive required power according to the PD specification.

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Configure Perpetual PoE and Fast PoE

To configure Fast PoE and Perpetual PoE, complete the following steps.

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 3	**interface** *interface-id* **Example:** `Device(config)# interface gigabitethernet 2/0/1`	Specifies the physical port to be configured, and enters interface configuration mode.
Step 4	**power inline port perpetual-poe-ha** **Example:** `Device(config-if)# power inline port perpetual-poe-ha`	Configures perpetual PoE. When you configure perpetual PoE on a port connected to a powered device, the powered device remains powered on during reload.
Step 5	**power inline port poe-ha** **Example:** `Device(config-if)# power inline port poe-ha`	
Step 6	**end** **Example:**	Returns to privileged EXEC mode.

Command or Action	Purpose
Device(config-if)# **end**	

Example: Configuring Fast PoE and Perpetual PoE

This example shows how you can configure perpetual PoE on a switch:

```
Device> enable
Device# configure terminal
Device(config)# interface gigabitethernet2/0/1
Device(config-if)# power inline port perpetual-poe-ha
Device(config-if)# end
```

Feature History: PoE

The following table prIE-9320-16P8U4X-Eovides release and related information for the features explained in this module. These features are available in all the releases subsequent to the one they were introduced in, unless noted otherwise.

Release	Feature	Feature Information
Cisco IOS XE Dublin 17.12.x	Power over Ethernet (PoE)	PoE is a technique for delivering DC power to devices over copper Ethenet cabling, eliminating the need for separate power supplies and outlets. You can configure PoE on the following Cisco Catalyst IE9300 Rugged Series Switch models: • IE-9320-24P4X-A and IE-9320-24P4X-E • IE-9320-16P8U4X-A and IE-9320-16P8U4X-E • IE-9320-24P4S-A and IE-9320-24P4S-E